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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,076	12/23/2003	Shigemi Wakabayashi	247117US0	8104
22850	7590	07/31/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			SHOSHO, CALLIE E	
ART UNIT		PAPER NUMBER		
1714				
NOTIFICATION DATE		DELIVERY MODE		
07/31/2007		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/743,076	WAKABAYASHI, SHIGEMI	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 5/7/07 & 7/6/07.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3 and 5-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3 and 5-17 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

**Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/7/07 has been entered.

**Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3 and 5-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gore et al. (U.S. 2003/0055178) in view of Ishizuka et al. (U.S. 2002/0025994) and WO 2001/96483.

Gore et al. disclose ink comprising aqueous dispersion of colorant containing crosslinked polymeric nanoparticles obtained from monomers including C<sub>16</sub>-C<sub>24</sub> alkyl (meth)acrylate, 2-40% salt-forming group containing monomer that is neutralized, and other monomer copolymerizable with the alkyl (meth)acrylate and salt-forming monomer and dye wherein the dye is attached to or reacted with the polymeric nanoparticle (paragraphs 2, 8, 14, 16, 35, 38, 51, 53-54, 66, 70, 72, and 88). For further detail regarding the dye, Gore et al. refers to Ishizuka et al. which discloses the use of oil-soluble dye such as quinophthalone or phthalocyanine dyes (paragraphs 16-18). Given that Gore et al. disclose polymer obtained from same type and amount of monomers as presently claimed, it is clear that the polymer would intrinsically possesses solubility in water as presently claimed.

The difference between Gore et al. and the present claimed invention is the requirement in the claims of (a) acid value of the water-insoluble polymer and (b) permeability controlling solvent.

With respect to difference (a), WO 2001/96483, which is drawn to aqueous ink jet ink, discloses colorant that is hydrophobic dye encapsulated with polymer wherein the polymer has acid value of 20-200. It is disclosed that if the acid value is less than 20, the dispersion stability of the colorant in the aqueous media is insufficient while if the acid value is greater than 200, aggregation readily takes place upon production of the colorant to cause deterioration in ejection stability and nozzle clogging (paragraphs 1, 17, 138, 149, 232, and 233).

In light of the motivation for using polymer with specific acid value disclosed by WO 2001/96483 as described above, it therefore would have been obvious to one of ordinary skill in the art to use polymer with such acid value, including that presently claimed, in Gore et al. in order to produce ink that has good dispersion stability as well as good ejection stability and that does not clog the printer nozzles, and thereby arrive at the claimed invention.

With respect to difference (b), WO 2001/96483, discloses the use of 0.5-30% di(tri)ethylene glycol monobutyl ether, i.e. permeability controlling solvent, in order to improve penetration of the ink into substrate and thus, improve print quality (paragraphs 93-94, 103, 105, and 109).

In light of the motivation for using di(tri)ethylene glycol monobutyl ether disclosed by WO 2001/96483 as described above, it therefore would have been obvious to one of ordinary skill in the art to use di(tri)ethylene glycol monobutyl ether in the ink of Gore et al. in order to produce ink with good print quality, and thereby arrive at the claimed invention.

**Response to Arguments**

5. Applicant's arguments filed 7/6/07 and 5/7/07 as well as applicants' 1.132 declaration filed 7/6/07 have been fully considered but they are not persuasive.

Specifically, applicant argues that none of the cited references discloses or suggest improved stability by selection of polymer particles of water-insoluble polymer having alkyl group of 20-30 carbon atoms in its side chain and having acid value of 30-120 mg KOH/g. Applicant argues that while Gore et al. disclose colorant encapsulated within polymer, there is no disclosure of polymer having acid number as presently claimed and no examples wherein the polymer has alkyl group of 20-30 carbon atoms in its side chain.

With respect to the acid number, it is agreed that there is no disclosure in Gore et al. of the acid number of the polymer which is why Gore et al. is used in combination with WO 2001/96483, which is also drawn to aqueous ink jet ink, and discloses colorant that is hydrophobic dye encapsulated with polymer wherein the polymer has acid value of 20-200 so that the colorant has good dispersion stability and ink has good ejection stability and nozzle clogging.

Further, while it is agreed that there are no examples in Gore et al. of polymer having alkyl group of 20-30 carbon atoms in its side chain, however, "applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others", *In re Courtright*, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967). Additionally, "nonpreferred disclosures can be used. A nonpreferred portion of a reference disclosure is just as significant as the preferred portion in assessing the patentability of claims", *In re Nehrenberg*, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). A fair reading of Gore

et al. as a whole discloses the use of polymer having alkyl group of 16 to 24 carbon atoms in its side chain.

Applicant argues that Gore et al. only suggests a generic use of polymer having C<sub>1</sub>-C<sub>24</sub> alkyl (meth)acrylate.

However, while Gore et al. disclose that the useful alkyl (meth)acrylates are C<sub>1</sub>-C<sub>24</sub> alkyl (meth)acrylates, it is significant to note that Gore et al. explicitly disclose that in one embodiment, the alkyl (meth)acrylate contains 16-24 carbon atoms. It is the examiner's position that Gore et al. do more than generically disclose C<sub>1</sub>-C<sub>24</sub> alkyl (meth)acrylate by disclosing three different types of alkyl (meth)acrylates that explicitly include C<sub>16</sub>-C<sub>24</sub> alkyl (meth)acrylate.

Applicant also argues that Gore et al. is not a relevant reference against the present claims in light of the comparative data set forth in the present specification.

The data compares ink within the scope of the present claims, i.e. comprising water-insoluble polymer having alkyl group of 22 carbon atoms (example 1 or 2), with ink outside the scope of the present claims, i.e. comprising water-insoluble polymer having alkyl group of 1, 2, or 12 carbon atoms (comparative examples 1-3 or comparative examples 4-6). It is shown that the inks of the present invention are superior in terms of printing reliability, ratio of retaining viscosity, and ratio of retaining average particle diameter.

It is noted that in the Advisory Action mailed 3/23/07, the examiner questioned whether the data was commensurate in scope with the scope of the present claims given that there was no disclosure in the examples of the acid number of the water-insoluble polymer. However, the 1.132 declaration filed 7/6/07 clarifies that the inventive example as well as comparative

examples 1, 2, 4, and 5 do in fact utilize water-insoluble polymer with acid number as presently claimed while comparative examples 3 and 6 do not.

With respect to the data, it is the examiner's position that the data is not persuasive given that the data does not compare ink of the present invention with ink of the "closest" prior art, namely, Gore et al.

That is, the ink of Gore et al. is closer to the presently claimed ink than the inks of the comparative examples. Specifically, Gore et al. disclose polymer particles comprising water-insoluble polymer having alkyl group of 16-24 carbon atoms in its side chain which is closer to the presently claimed polymer, i.e. having alkyl group of 20-30 carbon atoms in its side chain, than the polymers of the comparative examples, having alkyl group of 1, 2, or 12 carbon atoms in its side chain. It is significant to note that the upper limit of the number of carbon atoms in the alkyl group that is explicitly disclosed by Gore et al., i.e. 24 carbon atoms, falls within the presently claimed range for number of carbon atoms in the alkyl group of 20-30.

Applicant argues that applicants comparison of C<sub>22</sub> alkyl group polymer as compared to C<sub>1</sub>, C<sub>2</sub>, or C<sub>12</sub> polymer compares against the closest prior art given that Gore et al. generically disclose C<sub>1</sub>-C<sub>24</sub> alkyl acrylates with no disclosure of acid number and given that the examples of Gore et al. all disclose the use of polymer with alkyl groups having number of carbon atoms outside the scope of the present claims.

However, as set forth above, a fair reading of Gore et al. as a whole discloses the use of polymer having alkyl group of 16 to 24 carbon atoms in its side chain. That is, while Gore et al. disclose that the useful alkyl (meth)acrylates are C<sub>1</sub>-C<sub>24</sub> alkyl (meth)acrylates, it is significant to note that Gore et al. explicitly disclose that in one embodiment, the alkyl (meth)acrylate contains

16-24 carbon atoms. It is the examiner's position that Gore et al. do more than generically disclose C<sub>1</sub>-C<sub>24</sub> alkyl (meth)acrylate by disclosing three different types of alkyl (meth)acrylates that explicitly include C<sub>16</sub>-C<sub>24</sub> alkyl (meth)acrylate. With respect to the acid number, while the data compares ink within the scope of the present claims, i.e. comprising water-insoluble polymer having alkyl group of 22 carbon atoms and acid value of 65.1, with ink outside the scope of the present claims, i.e.. comprising water-insoluble polymer having alkyl group of 1 carbon atom and acid value of 213, it is the examiner's position that the data is not persuasive given that the data is not commensurate in scope with the scope of the "closest" prior art Gore et al. given that not only is the polymer outside the scope of the present claims with respect to the number of carbon atoms in the alkyl group of the polymer, but also outside that disclosed by Gore et al., i.e. polymer having C<sub>16</sub>-C<sub>24</sub> alkyl group.

Applicant argues that applicant is not required to compare the claimed invention against subject matter which does not exist in the prior art and cites *In re Chapman*, 357 F.2d 418, 422, 148 USPQ 711, 714 (CCPA 1996).

However, while applicant argues that there is no need to compare against subject matter which does not exist in the prior art, it is the examiner's position that the subject matter, i.e. polymer obtained from C<sub>16</sub>-C<sub>24</sub> alkyl (meth)acrylate, does exist in Gore et al. given Gore et al.'s disclosure of three types of alkyl (meth)acrylate which includes the explicitly recitation of C<sub>16</sub>-C<sub>24</sub> alkyl (meth)acrylate. Further, it is noted that Gore et al. disclose polymer having C<sub>16</sub>-C<sub>24</sub> alkyl group wherein C<sub>24</sub> alkyl group falls squarely within the presently claimed number of carbon atoms, i.e. 20-30 carbon atoms.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Callie E. Shosho*  
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7/22/07